



Chord on the go

Portable Hugo DAC/headphone amp strikes all the right notes

Instant replay

How to digitise all your old LP, cassette and tape recordings



Hi-Fi Choice

PASSION FOR SOUND

Issue No. 386

July 2014

Superstar system

WORLD EXCLUSIVE
1ST FULL TEST

Revolutionary Devialet amp and speakers set new sonic standard

30

PRODUCTS ON TEST:

Arcam, Cyrus, KEF, Marantz, NAD, Sonus faber and Yamaha



Rhythm master

B&W's 683 S2 floorstander will get your toes tapping

GROUP TEST

Turn it up!

Six of the best integrated amplifiers under £400



JULY 2014
9 770955 111106
£4.50
US\$9.99
07
PRINTED IN THE UK

IN-DEPTH DEVIALET ENSEMBLE
120 AMPLIFIER & GT1 SE LOUDSPEAKERS £6,290



► **DETAILS**

PRODUCT
Devialet Ensemble

ORIGIN
France

TYPE
Amplifier and
speaker package

WEIGHT
Amp: 5.65kg
Speaker: 8kg

DIMENSIONS
(WxHxD)
Amp:
383 x 40 x 383mm
Speaker:
200 x 330 x 250mm

FEATURES

- Amp: Class A/D hybrid analogue/digital
- Speakers: Atohm GT1 SE with matching Zef cable
- AIR streaming module
- Fully configurable inputs for Ethernet, USB, RCA (line-level and S/PDIF) Toslink
- Firmware updates via SD card/website
- 24-bit/192kHz upsampling DAC
- Phono stage

DISTRIBUTOR
• Absolute Sounds

TELEPHONE
0208 9713909

WEBSITE
absolutesounds.com
en.devialet.com



Forward thinking

From one of the most advanced hi-fi designers of our age comes an amp and speaker package to set the standard. **Andrew Simpson** investigates



challenging hi-fi's conventions has been at Devialet's core since the French high-end maker launched its groundbreaking D-Premier amp back in 2010. Concepts including customising settings via an onboard SD card and online configurator, along with firmware releases ensuring your amp stayed up to date brought fresh thinking to long-term ownership.

Devialet's range has since expanded into four models, and with each comes increased connectivity, power and configuration options. At the heart of all Devialet amps beats the same ADH (Analogue Digital Hybrid) amplification, which is a modern take on Quad's Current Dumpers of yesteryear that uses analogue Class A voltage amplification working in parallel with digital Class D dumpers. All Devialet amplifiers also employ 24-bit/192kHz upsampling Texas Instruments PCM1792 DAC chips, developed into its proprietary Magic Wire circuit.

Sitting at the centre of our package is Devialet's new entry-level 120 amp (£4,490 on its own), which morphed

Even at low levels this system opens the music up with stirring dynamism

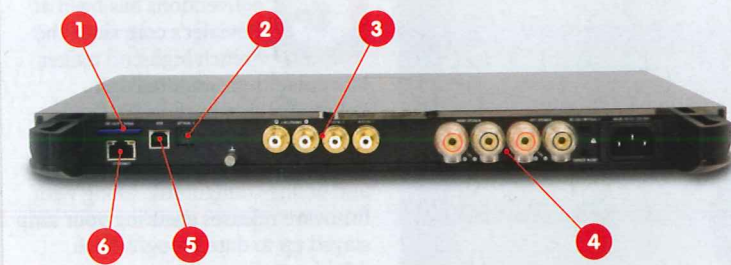
from the 110 model via new firmware, increasing its 110W output to 120W. Joining the 120 in our Ensemble is a pair of Devialet branded Atohm GT1 'Special Edition' loudspeakers with matching white Atohm cables.

What sets this pairing apart from other bundles is the clever use of Devialet's SAM tech, which tailors the amp's supplied signal to match the spec and real-world behaviour of the speakers' bass drivers.

The Atohm's cabinets are formed via layers of 3mm MDF bonded together to achieve their curved sides. Each speaker houses a metal grille-covered soft-dome tweeter with copper-clad aluminium wire voice coils and neodymium magnets, alongside an alloy coned mid/bass driver using Atohm's LDS peripheral suspension and a Kanton/Nomex coil former. The



CONNECTIONS



- 1 SD card slot
- 2 S/PDIF optical in
- 3 Configurable RCA inputs
- 4 Binding posts
- 5 USB port (Type B)
- 6 Ethernet port

single block of aluminium with a sliding cable-hiding cover at its rear. You can even wall mount it vertically!

Its physical controls extend to just a logo-shaped power button, which joins a porthole-like digital screen providing a window into the amp's working world, displaying volume and selected input. The minimalist theme continues with the classy matching remote that hosts just four buttons for power, source, mute and tone (bass/treble/balance), while a large rotary dial governs volume level. A longer press on the control's source button reveals the incoming sample rate on the amp's screen, useful for checking that what you're getting from the speakers is what you ordered at the source.

Making the most of Devialet's suite of user controls requires paying a visit to devialet.com's configurator area and customising the amp's settings, before downloading them onto the amp's pre-installed SD card. The site's intuitive interface allows for tailoring inputs and settings via simple diagrams of each amp's rear panel, making tweaking easy. Options include switching a set of the 120's RCAs between line-level, S/PDIF or phono inputs for connecting a turntable. At the click of a mouse you can also limit the amp's power output and change the remote's commands.

To keep costs down the 120 eschews the sub-out option and AES/EBU (XLR) socket that are fitted to the more expensive Devialets higher up the range. Nor do you get the internal phono daughter board that caters for custom matching cartridge loading and sensitivity settings.

Easy streaming

To stream networked music pop your network details into the online Configurator and download Devialet's AIR software to your computer's taskbar. Because AIR runs in the background of other programmes, you simply commence playback via your usual method (Spotify, JRiver and iTunes in my case), right click the AIR icon and choose your streaming

method via AIR or Ethernet (if you're hardwiring the amp to your router) to pipe a bit-perfect signal into the amp's master clock. There's also a downloadable USB driver and control app for Android and iOS devices, the latter of which lets you select input and volume level.

Sound quality

Across the board, this package is one of the most musically cohesive combinations I've heard. From the opening drums of Tori Amos' *A Sorta Fairytale* via a 16-bit/44.1kHz rip streamed over

Lower frequencies remain controlled, detailed and very natural sounding

Ethernet, the sheer uncoloured clarity and holographic window this package opens into the music is utterly captivating.

Devialet's SAM tech may only be weaving its spell on the bass drivers, but the knock-on effect in the treble is tangible. Amos' voice sweeps through the midrange and treble seamlessly, with no sense of the tweeter and mid-bass driver competing at the critical crossover point. With Amos' vocals placed slightly forward in the soundstage, I sense that the amp and partnering speakers are working together in perfect synergy, to deliver her singing with a breathtaking realism that's full of both genuine depth and drama.

Likewise, the Devialet combo times the percussion with effortless accuracy, and each note's opening transients are rendered with just the right amount of attack to pack enough punch without becoming hard edged in any way.

Befitting of an amp at this price, the Devialet's volume control allows for finite levels of incremental adjustment, and even at low levels this system opens the music up with

SAM TECH

SAM is a pre-programmed DSP model of a loudspeaker's low frequency behaviour that "matches the air pressure received by the recording microphone with the output of the loudspeaker" says Pierre-Emmanuel Calmel, Devialet's co-founder. SAM is not a feedback-controlled correction, a room compensation regime or a form of 'bass boost'. Instead, correction is applied dynamically, sample-by-sample in the time domain according to the loudspeaker's cabinet dimensions, volume, compliance of the air, mass of air in the vent and reflex losses. All bass driver parameters are accommodated including resonance frequency, Q and force factor, moving mass, suspension compliance, diaphragm area, etc. By fully controlling the amplitude and phase response of the speaker's output, SAM promises to maximise the bass extension of any 'mapped' speaker without ever forcing its drivers outside of their safe excursion limits. With Devialet's SAM at the helm, the speaker has every chance of fulfilling the designer's dreams for deep, clean and powerful-sounding bass – reducing boominess and distortions that might otherwise colour the critical midrange. PM

stirring dynamism. Likewise there's plenty of power at the other end of the scale, and with the Atohms sat atop a pair of (filled) 600mm Atacama Nexus stands, the music that flows forth has a sense of scale and grip that a speaker of this size has no right to possess. Bass in particular is blessed with enough power and slam to challenge my preconceptions of just how much air a pair or 150mm drivers in such a modest cabinet can move, which is testament to what the Devialet amp is able to get out of them without heading into boom territory.

Piping a 16/44 rip of Four Tet's *Plastic People* into the Devialet's USB port gets the party into full swing in the bass regions, but what's even more impressive is how this pairing ensures the lower frequencies remain controlled, detailed and natural sounding. Despite remaining deep within the soundstage, the double bass for example within Emily Barker's *Tuesday* (streamed at 24/96) is clearly articulated and brought to life without being forced to the fore. Instead, because the soundstage is so open, I'm able to hear deep into its recesses and uncover layers of detail at will.

Conclusion

Getting a system to sing isn't just about buying the most expensive kit you can afford, it's about choosing components that work together, and only then does the magic happen. The Ensemble takes the trial and error out of this process, and by accurately driving its speakers as they're designed to be driven you get to hear both products at their best. This package provides an exceptionally smooth and balanced insight into the music, and while it ain't cheap, that you get the same Devialet tech fitted to its amps costing four times as much with quality speakers thrown in, makes this a high-end bargain ●

Hi-Fi Choice

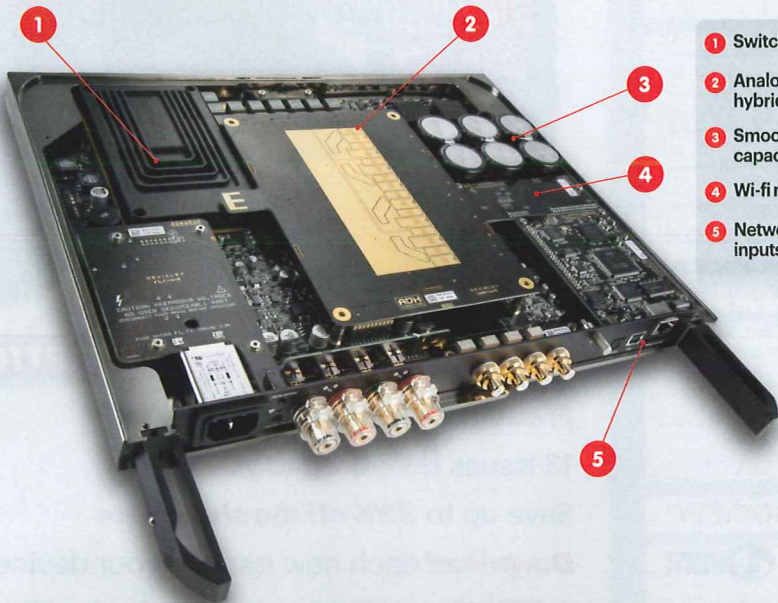
OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Superb sound; setup options aplenty; top-notch build quality
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Only one analogue input
- BUILD QUALITY** ★★★★★ **WE SAY:** Cutting-edge tech partnered with great-sounding speakers in a stunning user-friendly package
- FEATURES** ★★★★★

OVERALL



DEVIALET 120



- 1 Switchmode PSU
- 2 Analogue/digital hybrid amplifier
- 3 Smoothing capacitors
- 4 Wi-fi module
- 5 Network and USB inputs

ON TEST

Tested with the latest v7.1 firmware installed, this 120 ADH amplifier met its 120W/6ohm specification with a full 2x75W/8ohm, doubling to 2x 150W/4ohm – this power achieved with a peak level (0dBFS) digital input and the volume control set at +0.5dB (not 0dB). The output impedance is vanishingly low at $\lt;2\text{mohm}$. Distortion

at this output is still a fabulously low 0.0005% through bass and midrange, a performance largely maintained over the top 40dB of its dynamic range (from 75W down to just 7.7mW). The A-wtd S/N ratio is also a huge 116.8dB at this level. Distortion does increase with frequency, however, particularly above 10kHz, reaching

0.018% at 20kHz/1W/8ohm. The harmonics at this level are inaudible, of course. The response is flat out to +0.08dB/20kHz with 44.1/48kHz media, -0.1dB/40kHz with 96kHz files and -4dB/90kHz with 192kHz files. As with earlier Devialet amps, jitter is incredibly low – just 24psec at 10W output with 24-bit/48kHz media. PM

ATOHM GT1 SE



- 1 28mm silk dome tweeter
- 2 Rear bass port
- 3 Speaker cable binding posts
- 4 150mm alloy bass driver

ON TEST

The GT1 claims 89dB sensitivity, but our 86.8dB pink noise figure suggests that 87dB is more realistic. Sensitivity could have been higher had lower impedance been used – we measured a minimum modulus of 4.1ohms at 204Hz. With modest LF phase angles this results in a minimum EPDR of 2.2ohms at 134Hz, but there is another

dip to 2.2ohms at 20kHz and a third to 2.4ohms at 44Hz. On-axis response errors, 200Hz-20kHz, were very well controlled at $\pm 2.9\text{dB}$ for each speaker, with a gentle rise as frequency increases. Pair matching was poorer at $\pm 1.9\text{dB}$ over the same frequency range due to some narrow-band disparities in the high treble; below

10kHz the error was an excellent $\pm 0.6\text{dB}$. Bass extension was 60Hz for -6dB ref 200Hz; with SAM enabled it fell to below 20Hz. Engaging SAM made no difference to the 1.0% THD level at 100Hz for 90dB SPL at 1m. The CSD waterfall shows fast initial energy decay; low-level breakup modes were visible in the lower treble. KH

Q&A

Pierre-Emmanuel Calmel
CTO and president, Devialet



AS: Why have you chosen to pair this Devialet amp with Atohm's GT1 speaker?

PC: We love the GT1's qualities in terms of detailing, imaging, natural sound and bass. Despite its compact size, it's still able to rock our 400m³ showroom and consequently, many customers are buying GT1s to partner their Devialet amps – in fact, around half of the Devialet components currently being sold through our Paris showroom are part of a Devialet Ensemble package with GT1 speakers and Atohm cables. The GT1s embody the elements we believe are necessary to make the most desirable audio systems: beauty, compactness and, of course, performance.

Will SAM's database be expanded to tailor match more speaker brands and models?

Although we have no plans to offer other amp/speaker packages under the Devialet brand, SAM is potentially compatible with any passive electrodynamic speaker. We are launching the technology with support for around 12 models from different brands, and the number is increasing every week. We aim to have more than 200 models supported in the near future – we have several engineers working on this in our acoustics and signal processing laboratory in Paris.

Our engineers can perform a combination of measurements to build an accurate real-time model of any pair of speakers. This is used as the basis for developing a specific SAM profile for the speakers before releasing the profile on our updated SAM configurator. We can do this on our own, but we'd much prefer to work with loudspeaker manufacturers who can provide us with technical data and we're open to any collaboration.

Will customers be able to recommend which speakers you develop SAM profiles for?

Yes! We're actually asking consumers to vote for the speakers they want to see supported first, and you can take part at votehorsam.devialet.com.